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AMERICAN PHARMACEUTICAL ASSOCIATION

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COVER: All railroads lead to the 52-story Terminal Tower in downtown Cleveland for A. PH. A. convention goers. Dwarfed beneath it is the 1000-room Hotel Cleveland, headquarters for the 92nd annual meeting of the ASSOCIATION (see pages 198 and 203).

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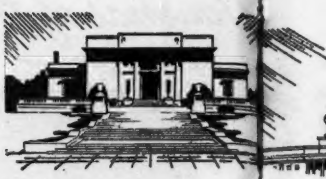


The Way I

"COME to the convention" slogans of former years now carry the afterthought: "—don't unless you have an active and direct interest in the program." Although routine conventions have no place in a war economy, the urgent war and postwar problems involved in maintaining pharmacy's essential health services demand a meeting of minds and guidance that would make it unwise to omit the 92nd A. PH. A. annual meeting and the concurrent sessions of affiliated professional groups.

Cleveland as the place and September 7, 8 and 9 as the dates were chosen to put the least possible burden on transportation and hotel facilities. During the streamlined sessions packed into these three days, plans will be discussed having an important bearing on the future of pharmacy.

Attention will naturally focus on our reduced personnel. Some claim that it is a threat to the life and service of the profession, while others maintain that it merely means that the remaining pharmacists must devote more of their time to prescription work and other health services until after the war; they point out that there have been no demands from the public that more pharmaceutical service be provided. The Cleveland meeting is the time for a frank discussion of what the present situation really means to the profession.

Some groups of overworked pharmacists, who are still attempting to maintain their usual broad scope of drugstore services, are beginning to talk about lowering educational standards to overcome the difficulty of obtaining registered men and of paying higher salaries. Questions that must be answered are: What relief would such retrogression provide during the war when most potential students are being called into the armed forces? How many cram-school students could be turned out before the fighting pharmacists return to resume practice?

There will be the problem of assimilating the thousands of returning soldier-pharmacists into those places in the profession where their services are most needed and where they will have the best opportunity to practice the type of pharmacy for which they have been trained. Their letters indicate that they expect definite plans to be laid for providing "refresher" courses. Provision must be made for maximum cooperation with government agencies that are preparing to rehabilitate those leaving the armed forces and to offer them financial assistance and additional educational opportunities. The status of Army- and Navy-trained pharmacy technicians must also be defined. Pharmacists in service and out will be awaiting the results of the sessions of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy.

Urgent attention must be given to our disintegrating educational institutions. Present enrollment in pharmacy colleges averages about 25 students. This means that some of the colleges will have considerably less than 25, others a few more. College officials meeting at the convention will be faced with the question of whether or not it is possible, or wise, to try to maintain all of the present 65 pharmacy colleges as separate entities. The accrediting body, the American Council on Pharmaceutical Education, must decide on what basis educational standards can be applied. These are not questions that concern the academician alone, for they will affect the number of pharmacists in retail practice and how pharmacy will be practiced for a generation.

The A. PH. A. Council, the Committee on Planning and Policy and other groups will consider further the serious criticism of the availability of medical care that has arisen

Looks To Us

from the public and through its Congressional representatives. Defeat of the medical provisions of the Wagner bill will, in no sense, end the contention over the basic issue or need from which it is derived. The fact that government plans for medical care have been adopted or are being given favorable consideration in other democratic countries is proof that it is no mere "socialistic" brain child of a few "radicals." Although pharmacy has not been included in either private or government proposed health insurance plans, it is inevitable that pharmacy will be affected eventually by whatever method of medical care is accepted in the reconstruction period ahead.

Pharmacy in the armed services, as in civilian life, currently seems to be of somewhat uncertain status. Satisfaction over the establishment of a Pharmacy Corps in the Army has been short lived as plans to extend the Corps to the scope intended apparently remain pigeonholed in Army desks. This situation will be at the top of the list of knotty problems for the Committee on Status of Pharmacists in Government Service, together with current plans to obtain a similar corps in the Navy.

Section meetings will be resumed at the A. PH. A. convention this year because of the rapid advances in scientific pharmaceutical knowledge, the wide use of new drugs and the need for free interchange of professional information and ideas. Every pharmacist who has made a worth-while research contribution or developed improved techniques should give these new advances wide distribution by preparing a paper for the appropriate Section. Papers will also be presented at meetings of affiliated groups, such as the American Society of Hospital Pharmacists and the American College of Apothecaries. Although the streamlined meeting leaves room for only one session of each Section, any papers that are not read because of lack of time will be presented by title and abstract and submitted for publication.

The Conference of Pharmaceutical Association Secretaries, representing the affiliated state groups, holds a key position at the meeting. For it is at the state level that pharmacy laws are enacted and enforced, that Selective Service policies are administered, that education is supported, and the problems of personnel and practice are also in many ways peculiar to each state.

Most of the wartime policies and conditions with which pharmacists must cope have now taken definite shape. We can now plan more specifically and act more directly toward meeting our problems than was possible at past meetings. Leaders and representative pharmacists from every branch of the profession will forgather in Cleveland to attack these war and postwar issues that will affect every pharmacist during the next few years and leave their permanent mark on the profession. Those who do not attend the meeting should send suggestions to their representatives. The various committees and executive groups are listed in the directory published in the June–July issue of THIS JOURNAL on page 187.

A. Ph. A. Supplies

ALCOHOL TAX DRAWBACK FORMS

DIRECTIONS AND COMPLETE SET OF FORMS MADE AVAILABLE TO PHARMACISTS TO SIMPLIFY THE PROCEDURE FOR OBTAINING SIX DOLLARS PER GALLON REFUND

PHARMACISTS are now paying $17.10 tax on every wine gallon of U. S. P. alcohol they use to compound prescriptions and manufacture medicinal products. But two-thirds of the tax will be refunded to pharmacists who file a quarterly claim for the tax "drawback." To become eligible for the claim, a special annual tax must be paid on each pharmacy or manufacturing laboratory for which this privilege is desired. The tax is graduated according to the amount of alcohol used (see THIS JOURNAL, 5:97, 1944).

Will it be worth while for you to take advantage of the drawback? This can be determined in a few moments. Estimate the amount of distilled spirits in terms of proof gallons of alcohol used annually in your pharmacy or laboratory. A wine gallon of U. S. P. alcohol, it will be recalled, is equivalent to 1.9 proof gallons. Multiply the number of proof gallons by the $6 per gallon drawback. Then compare this total refund with the following scale of special taxes. If the total annual use of alcohol does not exceed 25 proof gallons the special tax is $25, if not more than 50 gallons the tax is $50, and if more than 50 gallons the tax is $100.

This means that the pharmacist can pay for the $25 special tax by the use of slightly over four proof gallons annually, or about two wine gallons. All alcohol used in excess of that amount up to 25 proof gallons will provide a net refund of $6 per proof gallon (50% alcohol by volume). For those who use between 25 and 50 proof gallons in a year, the refund on slightly over eight proof gallons will be required to equalize the special tax.

Whether or not the pharmacist believes it profitable for him to apply for the drawback, he will not be permitted to raise prescription fees or the prices of other nonbeverage alcoholic products to counteract the sharply increased alcohol tax. This, says the Office of Price Administration, is because prices of alcohol-containing products established under the Maximum Price Regulation at the March 1942 level involved a higher tax cost ($4 per gallon with no drawback) than the Revenue Act of 1943 provides ($3 after drawback).

Unless the pharmacist can take advantage of the drawback provision, the new alcohol tax thus places an additional burden on his budget and creates a pressure to raise the price of essential drugs to the patient. Therefore THIS JOURNAL is making simplified forms available to its readers that will aid them in keeping the records required of pharmacists and others who claim alcohol tax refunds. These forms have been worked out in compliance with the requirements of the Bureau of Internal Revenue.

Practicing pharmacists have expressed the belief that the time required to keep the records will not be prohibitive. Directions for use are supplied with the forms.

THIS JOURNAL will endeavor to supply further authoritative information to pharmacists who submit specific queries on problems that may arise in keeping records for drawback claims.

The special tax for the 1944–1945 fiscal year may now be paid through the Collector of Internal Revenue for your district by applying on Form 11. This will entitle you to claim the drawback on alcohol used during the quarter April 1 to June 30 and, later, for the subsequent three quarters. A drawback claim is filed each quarter and must be in the hands of the Collector of Internal Revenue not later than the last day of the quarter following the quarter in which the alcohol is used.

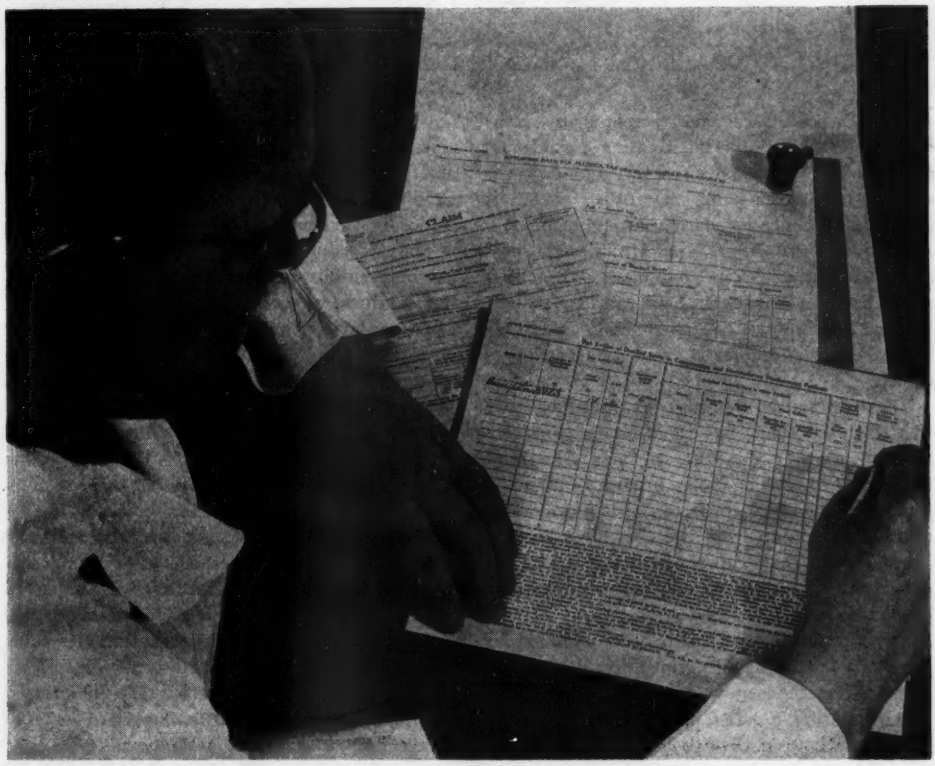
Formerly, the alcohol tax drawback was based on the amount of alcohol-containing products manufactured by the pharmacist that were dispensed or distributed during the quarter. Starting with the quarter ending June 30 this provision will be changed and simplified by making the alcohol eligible for tax drawback as soon as it is used in the compounding of prescriptions or the manufacture of drugs or other nonbeverage products.

To provide part of the necessary supporting data for your claim to refund or drawback, a manufacturing record must be kept during the quarter. In the forms supplied by THIS JOURNAL provision has been made to keep this record (part 3 of the form) in triplicate so that one copy can be retained for the pharmacist's file and the two remaining copies can be submitted as part of the su pporting data without revising this information and transferring it to other forms. For alcohol used for physicians' prescriptions, only three bits of information are required: (1) the amount of distilled spirits used, (2) the kind used, *e. g.*, U. S. P. alcohol, and (3) the numbers of the first and last prescription of a group of serially numbered prescriptions in which the specified quantity of distilled spirits or alcohol was used.

In manufacturing pharmacy some additional information is required, such as the name and formula designation of the product, the number of wine gallons prepared and the per cent of alcohol in the finished preparation.

Other sections of the four-part form provide: (1) information showing that the pharmacist holds the proper special tax stamp, (2) a record of the tax payment and receipt of shipments of distilled spirits by the pharmacist during the quarter and (3) a quarterly inventory statement and summary of alcohol use.

In addition to four sets of the four-part form (one for each quarter) for supporting data, the material being supplied by THIS JOURNAL on a nonprofit basis includes official forms furnished by the Bureau of Internal Revenue for applying for the special tax stamp and for filing the drawback claim for the first quarter, carbon paper and a file folder for alcohol tax records. This collection supplies all the material you will need to obtain the alcohol tax drawback. If you would like the complete set of forms send fifty cents to the editor at 2215 Constitution Avenue, Washington 7, D. C.



JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION
PRACTICAL PHARMACY EDITION
2215 Constitution Avenue, N. W.
Washington 7, D. C.

Please find enclosed ..... for which please send me ..... sets of 1944–1945 alcohol tax drawback forms at fifty cents per set. Each set is to contain (1) a collection of four-part forms to cover supporting data for each quarter of the year, (2) official Bureau of Internal Revenue forms to apply for the annual special tax stamp and to file the first quarter claim; (3) special size carbon paper to make duplicate and triplicate copies as required, (4) file folder for alcohol tax records and (5) directions for using the forms.

Pharmacists conducting extensive manufacturing operations can obtain additional manufacturing records as needed at a cost of ten cents for each two additional triplicate forms.

_____
(name)

_____
(address)

_____
(city and state)

BETTER VACCINES ARE PREPARED BY IRRADIATION

MORE potent vaccines prepared by completely killing or inactivating turbid suspensions of bacteria and viruses with a newly developed ultraviolet lamp may prove to be an important advance in pharmaceutical technique. A condensed report (*J. Am. Med. Assoc.*, 125: 531, 1944) on the improved method has been made by Dr. Sidney O. Levinson, Dr. Albert Milzer, Dr. Howard J. Shaughnessy, Dr. Franz Oppenheimer and John L. Neal, pharmacist, of Chicago.

The bacterial suspensions are killed or inactivated in less than one second by exposing continuously flowing thin films to far and extreme ultraviolet irradiation. The intensity of irradiation, film thickness, time of exposure and distance of the lamp from the film have been so standardized that experiments can be duplicated with consistent results, the researchers report.

Some good vaccines have been prepared by other workers using ultraviolet irradiation, but in former methods it was not possible to avoid overirradiating a large part of the suspension while inactivating the whole, and results were not constant. In this method of preparing vaccines, inadequate irradiation will not completely inactivate the bacterial suspension, and overirradiation will destroy the immunogenic properties of the vaccine.

The procedure used by the Chicago workers not only entails a minimum loss of antigenicity, but produces a more potent vaccine than the usual methods of inactivation employing heat or chemicals.

Several lots of rabies vaccine inactivated by the new irradiation technique consistently induced a higher degree of immunity in mice than phenolized vaccines induced. Vaccines of this type showed no significant loss of potency after storage for six months at 5° C.

About 150 inactivation experiments, using the improved ultraviolet method, have been completed. Complete sterilization was achieved after 0.17 to 0.33 second of exposure of suspensions containing one billion organisms per cubic centimeter. Organisms used were *Escherichia coli*, *Eberthella typhosa* (strain 58), *Salmonella enteritidis*, *Staphylococcus aureus*, *Streptococcus viridans* and *Diplococcus pneumoniae* (type 1).

A. PH. A. WILL HOLD 92ND ANNUAL MEETING SEPTEMBER 7, 8 AND 9

THE 92nd annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION will be held at Hotel Cleveland in Cleveland, Ohio, on Thursday, Friday and Saturday, September 7, 8 and 9. Important plans to meet war and postwar problems are expected from the papers and reports that will be presented and from decisions that will be reached at the sessions of the A. PH. A. and affiliated groups. The tentative general program appears on page 204 and the complete program will be printed in the September issue of THIS JOURNAL, which will be published just before the convention.

Affiliated organizations that will hold meetings in conjunction with the A. PH. A. include the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, the American College of Apothecaries, the American Society of Hospital Pharmacists, the Conference of Law Enforcement Officials, the Conference of State Pharmaceutical Association Secretaries, the American Institute of the History of Pharmacy, the Plant Science Seminar and various fraternities.

General sessions of the ASSOCIATION and meetings of the House of Delegates and the Council and one session of the Sections will be held.

It is hoped that pharmacists will maintain the steady flow of scientific and professional contributions to the literature as in past years. Any papers that are not read at the meeting because of lack of time will be presented by title and abstract and submitted for subsequent publication. Contributors are urged to send titles of proposed papers to the proper Section secretaries without delay and accepted papers are to be submitted in duplicate as soon as possible. The Section secretaries are:

TENTATIVE GENERAL PROGRAM OF THE 92ND ANNUAL MEETING

OF AMERICAN PHARMACEUTICAL ASSOCIATION AND AFFILIATED ORGANIZATIONS

HOTEL CLEVELAND, CLEVELAND, OHIO—SEPTEMBER 7, 8 AND 9

WEDNESDAY, SEPTEMBER 6

9:00 A.M. American Council on Pharmaceutical Education
11:00 A.M. Council, A. PH. A.
8:00 P.M. Executive Committee, American Association Colleges of Pharmacy
8:00 P.M. Executive Committee, National Association of Boards of Pharmacy
8:00 P.M. Officers and Regional Directors, American College of Apothecaries
8:00 P.M. Executive Committee, American Society of Hospital Pharmacists

THURSDAY, SEPTEMBER 7

9:00 A.M. Teachers Conferences, American Association of Colleges of Pharmacy
9:00 A.M. National Association of Boards of Pharmacy
9:00 A.M. American College of Apothecaries
9:00 A.M. American Society of Hospital Pharmacists
9:00 A.M. Conference of State Pharmaceutical Association Secretaries
1:30 P.M. American Association of Colleges of Pharmacy
1:30 P.M. National Association of Boards of Pharmacy
2:00 P.M. American College of Apothecaries
2:00 P.M. American Society of Hospital Pharmacists
2:00 P.M. Conference of State Pharmaceutical Association Secretaries
6:30 P.M. Dinner, A. PH. A. and Affiliated Organizations
8:30 P.M. First General Session, A. PH. A.

FRIDAY, SEPTEMBER 8

9:00 P.M. American Association of Colleges of Pharmacy
9:00 A.M. National Association of Boards of Pharmacy
9:00 A.M. American College of Apothecaries
9:00 A.M. American Society of Hospital Pharmacists
9:00 A.M. Conference of State Pharmaceutical Association Secretaries
1:00 P.M. Luncheon, Kappa Psi Fraternity
1:00 P.M. Luncheon, Phi Delta Chi Fraternity
2:00 P.M. First Session, House of Delegates
2:30 P.M. Council, American Institute of the History of Pharmacy
3:00 P.M. Conference of State Pharmaceutical Association Secretaries
4:00 P.M. Meeting, Committee on Nominations
4:00 P.M. Meeting, Committee on Resolutions
6:00 P.M. Dinner and Annual Meeting, Rho Chi Society
8:00 P.M. Scientific Section and Sections on Education and Legislation, Practical Pharmacy, Pharmaceutical Economics and Historical Pharmacy
8:00 P.M. Conference of State Pharmaceutical Association Secretaries

SATURDAY, SEPTEMBER 9

9:00 A.M. Breakfast and Business Session, Women's Auxiliary
9:00 A.M. Second Session, House of Delegates
10:00 A.M. Conference of State Pharmaceutical Association Secretaries
2:00 P.M. Final Session, House of Delegates
8:30 P.M. Final General Session, A. PH. A.

SUNDAY, SEPTEMBER 10

9:00 A.M. Council, A. PH. A.

NOTE: Plant Science Seminar—meetings September 5 and 6.

Scientific Section: F. E. Bibbins, 150 W. 64th Street, Indianapolis, Indiana.

Section on Practical Pharmacy: R. W. Clark, 760 Belvidere Avenue, Westfield, New Jersey.

Section on Education and Legislation: P. O. Clark, 601 Locust Street, Chillicothe, Missouri.

Section on Pharmaceutical Economics: Stephen Wilson, 1431 Boulevard of the Allies, Pittsburgh, Pennsylvania.

Section on Historical Pharmacy: K. L. Kaufman, Medical College of Virginia, Richmond Virginia.

Those planning to attend the meeting should make hotel and train reservations long in advance. The selection of Cleveland as the meeting place and September 7–9 as the dates are designed to place the least possible burden on transportation facilities, but A. PH. A. officials request that attendance be limited as far as possible to those directly interested in the program.

Hotel Cleveland, convention headquarters, has space to accommodate all sessions and has 1000 rooms with bath at the following rates: single rooms, $3.25, $3.50, $4, $4.50, $5, $6, and $7 per day; double rooms with double beds, $4.50, $5, $5.50, $6, $6.50, $7 and $8 per day; double rooms with twin beds, $6, $7, $8, $9 and $10 per day; parlor, two bedrooms and bath, $18 and up for three persons and $20 and up for four persons; parlor, bedroom and bath, $10 and up for one person and $12 and up for two persons. Other Cleveland hotels include the Carter, the Hollenden and the Statler, which have approximately the same rates.

MAKE YOUR TRAIN AND HOTEL RESERVATIONS EARLY

MORE STATES RESTRICT DISPENSING OF VITAMINS

POWER to restrict the distribution of vitamins to pharmacies is within the scope of the laws administered by the New York Board of Pharmacy, according to an opinion handed down by the Attorney General of that state. This action follows close on the heels of a similar ruling obtained in Minnesota.

The pharmacy law in these states makes it unlawful to dispense drugs, other than proprietaries, except under the personals upervision of a registered pharmacist. The definition of a drug breaks down into three parts (1) any medicament recognized in official compendia, (2) any substance used internally or externally for the cure, mitigation, treatment or prevention of disease in man or other animal and (3) any substance other than food intended to affect the structure or function of the body of man or animal.

In both states the Attorney General was of the opinion that vitamins are drugs under the law. Furthermore, vitamins cannot be exempted as proprietaries because there is nothing secret about their composition nor does anyone have the exclusive right to vitamin distribution.

The point of contention in some states has been whether vitamins are foods or drugs. The New York and Minnesota opinions admit that vitamins are both, but point out that they are drugs when dispensed in concentrated form as a tablet, capsule or liquid.

These two recent rulings on vitamin distribution follow similar restrictions that are in effect in New Jersey, Indiana and elsewhere. Most states have pharmacy laws which might form a basis for such restrictions and it is expected that like rulings will be sought in other states.

In approving the action taken in New York, Dr. E. F. Kelly, secretary of the ASSOCIATION, was quoted by the *New York Times* as stating that the ruling is in accord with "the objective of the AMERICAN PHARMACEUTICAL ASSOCIATION to restrict the dispensing of drugs and medicines to licensed pharmacists, since they are qualified by education and training to protect the public in the interests of public health."

Strong resistance to the ruling from nondrug outlets is expected, however, and the grocers are already considering bringing it to a court test.

Tragacanth Replaced by

PECTIN IN PASTES AND OINTMENTS

PECTIN has properties as a thickening and emulsifying agent that are making it popular in pharmacy. Its use as a thickening agent in tannic acid pastes to replace gum tragacanth has particularly been investigated at the Department of Agriculture's Western Regional Research Laboratory. Formulas for pastes prepared with pectin and an ointment base stabilized with pectin are reported by W. D. Maclay, Allan D. Shepherd and Harry Lotzkar (*J. Am. Pharm. Assoc., Scien. Ed.*, 33: 113, 1944):

Tannic acid	10%
Pectin (200-grade, high methoxyl, <100 p. p. m. iron)	5
Glycerol	12
Sodium sulfite	0.2
Preservative (methyl *p*-hydroxybenzoate)	0.2
Ringer's solution (alkaline, to adjust *p*H to 4 or above)	72.6

For a tannic acid paste containing sulfonamides the following formula is suggested:

Tannic acid	10%
Pectin (200-grade, high methoxyl, <100 p. p. m. iron)	5
Glycerol	12
Sulfonamide (200 mesh or finer)	5
Sodium sulfite	0.2
Preservative (methyl *p*-hydroxybenzoate)	0.2
Ringer's solution (alkaline, to adjust *p*H to 4 or above)	67.6

In compounding the above formulas, the tannic acid is dissolved in the alkaline Ringer's solution at room temperature. Add this solution rapidly to a previously triturated mixture of pectin, preservative, sodium sulfite, glycerol and (when used) the sulfonamide. Triturate until a uniform mixture results. Homogeneity of the paste is improved by passing it through a hand homogenizer.

Of a number of ointments stabilized with pectin which were submitted to the National Research Council, the following formula providing sulfonamide medication was believed to be most satisfactory:

Ringer's solution (alkaline, to adjust *p*H to 5)	57.8%
Petrolatum, heavy liquid	20
Glycerol	12
Sulfonamide	5
Pectin	5
Methyl *p*-hydroxybenzoate	0.2

Essentially the same formula was studied as an ointment base with a *p*H varying from 3 to 6:

Ringer's solution (alkaline)	62.8%
Petrolatum, heavy liquid	20
Glycerol	12
Pectin (200-grade, high methoxyl)	5
Methyl *p*-hydroxybenzoate	0.2

In a jar, disperse the pectin in the liquid petrolatum. Then add rapidly the alkaline Ringer's solution containing the glycerol. Shake the mixture until it is no longer fluid, transfer to a mortar and triturate until smooth. Both the appearance and the stability of the base can be improved by passing the product through a hand homogenizer twice.

If the medicament to be incorporated into the base is soluble in either water or oil, the product can be prepared essentially as described above. But if the medicament is insoluble in both water and oil, the researchers recommend the following modification: Withhold the glycerol when preparing the base. Then disperse the medicament in the glycerol and incorporate this mixture into the base by trituration.

Washable and Stable

Tests on the pastes and ointments revealed that they are washable, stable at lower temperatures, and showed no significant settling of particles of 200 mesh or finer. Like tragacanth preparations, those containing pectin deteriorate at high temperatures. At 71.6° F. the paste showed a 10% increase in viscosity after about five months' storage. The ointment base showed an increased viscosity of 25% after four months' storage at the same temperature. After the paste and ointment base were stored at 131° F. for a month the viscosity had fallen to about 10%

and 25% of their initial values respectively.

A dark discoloration of the products occurs in the presence of iron. This can be avoided by using nonferrous utensils in their preparation and by using pectin of low iron content. The sodium sulfite in the formulas prevents discoloration due to oxidation of the tannic acid if the preparations are protected from sunlight.

Both the paste and ointment are incompatible with medicaments containing ions of heavy metals. The ointment base was also found to be incompatible with sulfur, ichthammol and birch tar.

Satisfactory pastes were prepared containing each medicament or combination of medicaments in the following list:

Gentian violet 1%; acriflavine hydrochloride 1%; salicylic acid 3%; sulfur 10% and 15%; sulfathiazole 5%; picric acid 1%; tyrocidine 50 γ/Gm.; sulfanilamide 5%; brilliant green 1%; coal tar 5%; phenol 2%; oil of birch tar 10%; tyrothricin 50 γ/Gm.; gramicidin 50 γ/Gm.; acriflavine hydrochloride 1%, brilliant green 1% and gentian violet 1%; salicylic acid 3% and benzoic acid 6%; salicylic acid 2% and sulfur 5%; tannic acid 10% and phenol 0.5%; tannic acid 20% and acriflavine hydrochloride 0.1%; tannic acid 2.5% and mercuric chloride 0.1%; tannic acid 10% and salicylic acid 0.1%; resorcinol 2% and coal tar 5%.

Each of the following medicaments or combination of medicaments formed a satisfactory and compatible product with the ointment base:

Tannic acid 10%, sulfadiazine 5% and sodium sulfite 0.2%; tannic acid 10%, sulfanilamide 5% and sodium sulfite 0.2%; salicylic acid 3% and benzoic acid 6%; sulfanilamide 5% and urea 20%; sulfadiazine 5%; sulfur 10%; phenol 2%; Burow's solution 10%; zinc carbonate 10%; icthammol 5%; balsam peru 10%; sulfanilamide 5%; sulfathiazole 5%; benzoyl peroxide 5%; allantoin 10%; zinc oxide 10%; coal tar 5%; birch tar 10%; ammoniated mercury 10%; tannic acid 10% and sodium sulfite 0.2%.

TOXICITY OF ISOPROPYL ALCOHOL TESTED

ISOPROPYL alcohol is only slightly more toxic than ethyl alcohol internally, and neither produces harmful effects externally under the conditions of the experiments conducted on rats over a nine-month period. These results (*J. Am. Pharm. Assoc., Scien. Ed.*, 33:111, 1944), reported by Dr. Lloyd L. Boughton, are of particular interest due to the greatly increased use of isopropyl alcohol to replace ethyl alcohol in products for external application.

Five per cent solutions of ethyl and isopropyl alcohol were given to groups of albino rats as their only water supply for 304 days. Litter mate controls were given tap water. On the average, the amount of ethyl alcohol imbibed by the rats per day would be equivalent to 147 cc. of absolute alcohol drunk by a 154-lb. man. The daily dose of isopropyl alcohol taken would be equivalent to 131 cc. of absolute alcohol taken by a 154-lb. man.

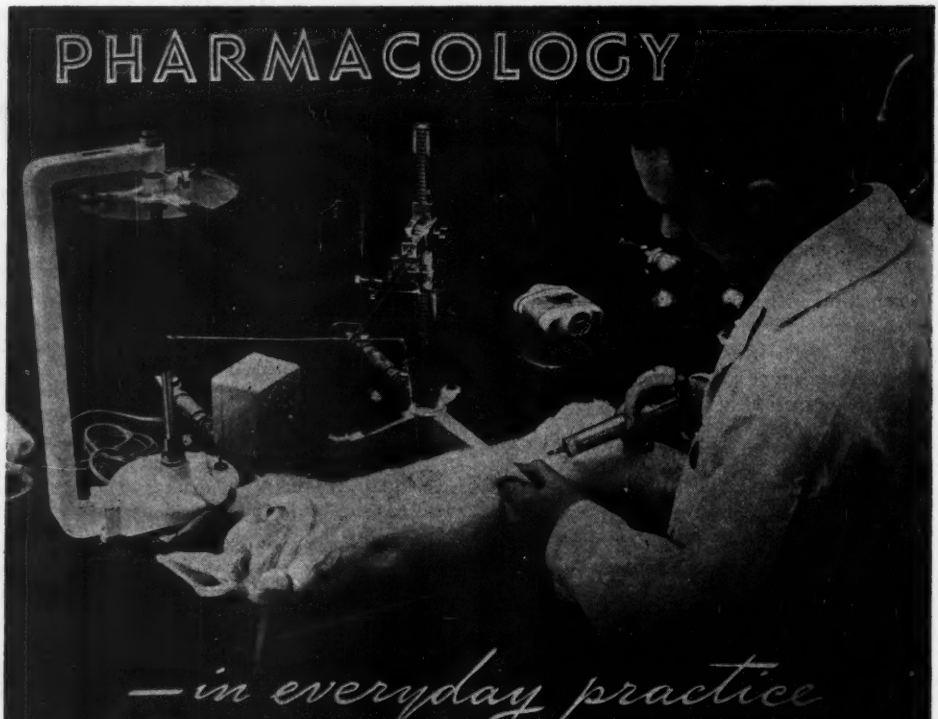
Both groups lost weight during the test, but gained rapidly on the controls after the alcohol was withdrawn. The rats that had received isopropyl alcohol outweighed the controls after one month on tap water. During the tests the rats were sluggish in finding their way through a maze, this effect being most marked in the group on isopropyl alcohol. The sluggishness was only partly eliminated during the withdrawal period. There was no significant difference in the death rate in either the test or control groups.

The nontoxic nature of the alcohols when applied externally was demonstrated by 187 daily applications of 50% solutions that were given during the nine-month period. No effects were observed, Dr. Boughton reports, that would differentiate the animals given ethyl or isopropyl alcohol from the controls.

SULFA QUELLS "CAMP FEVER"

Use of small amounts of sulfadiazine has reduced the mortality rate from cerebrospinal meningitis—the so-called "camp fever" of the Revolutionary and Civil wars—from 93.2% in the Civil War to less than 3% in the present war, the War Department has announced.

It has been possible to head off epidemics by the occasional administration of sulfadiazine to all members of a military unit, especially under such circumstances as embarkation on a troopship.



by WALLACE F. WHITE

UNIVERSITY OF CONNECTICUT, COLLEGE OF PHARMACY

MODERN KNOWLEDGE OF ACTIONS AND USES OF DRUGS PROVIDES BASIS FOR IMPROVED METHODS OF PHARMACEUTICAL PRACTICE

SOME years ago the title of this paper would have included the term *materia medica*. Today this term has been made obsolete by the progress of medical science; in its stead we speak of *pharmacology*, the physiological science dealing with the functions of drugs. The older term included the descriptive and anatomical study of plant drugs, now called pharmacognosy, as well as that phase of the subject dealing with the actions and uses of drugs known as pharmacology. When most drugs were of plant origin there was some excuse for combining these two sciences into one. Today there are more drugs official from chemical sources than from plant sources, so it would be just as appropriate to link pharmacology with chemistry as with pharmacognosy.

The pharmacist must have a knowledge of the sources of drugs and of their physical and chemical properties, but it is also important that he be familiar with the functions of the drugs he dispenses. Let us then examine some of the ways in which pharmacology can be used in everyday practice by the pharmacist whose intent is to provide a professional service to the physician and to the public.

Pharmacology is a big field, in a sense parasitic

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upon fields of study such as pharmacy, physiology, organic and physiological chemistry, bacteriology and biology. It includes everything that happens to the drug and to the body from the time of introduction into the body to the time of excretion from the body. To be more specific, it includes absorption, changes of the drug into more active or less active form in the body, actions on organs of the body both toxic and nontoxic, therapeutic usage, proper dosage, contraindications and excretion of the drug.

Drug Doses

One of the most apparent applications of pharmacology to retail pharmacy is related to doses of drugs. The pharmacist should know that such drugs as picrotoxin, atropine, physostigmine, and strophanthin have very small doses because he knows what these drugs do in the body. He also should know that drugs like magnesium sulfate, calcium carbonate, sodium bicarbonate, and mandelic acid have large doses and therefore are not apt to be toxic.

There are some drugs for which the dosage is not as clear cut; these drugs may be prescribed in different amounts depending upon the use intended. Some examples of such drugs are: paraldehyde, which may be used in 2- to 4-cc. doses or in doses of 25 to 30 cc. depending upon the use; bismuth salts, which may be injected in small doses for syphilis or taken orally in large doses as antacids; vitamin preparations, which may be used in small doses to prevent a deficiency and in large doses to cure a deficiency.

For all drugs the pharmacist dispenses he must know how much leeway in dosage is permissible before there is danger of toxic effects. He must also keep in mind when checking doses that they may vary, especially with the varying age, size, and physical condition of patients. Before leaving doses it might be well to mention digitalis preparations. In the new Pharmacopœia, digitalis preparations are 15% weaker than those in U. S. P. XI and 25% stronger than those in U. S. P. X. The physician will appreciate having such facts tactfully called to his attention so that he can make the proper adjustment in doses for his patients.

It is usual for the pharmacist to look for overdosage on prescriptions. Conversely, he may recognize that a dose is too small for therapeutic value and point this out to the physician. An example is Elixir of Terpin Hydrate N. F. which provides only 1 grain of terpin hydrate per 4-cc. dose. This dose is too small for therapeutic action since the effective dose of terpin hydrate is 4 to 5 grains given 3 to 5 times per day. This drug may be given by itself in capsule form if a therapeutic dose is intended.

The fundamental principles of absorption are of importance to the pharmacist. For example, iron salts are absorbed in acid medium and presumably only in the first part of the small intestine. In order to lessen gastric irritation the pharmacist might think of dispensing iron salts in enteric coated form. This form would be well tolerated by the patient because the medication might pass completely through the intestinal tract without being absorbed at all and therefore be valueless. The pharmacist well versed in the fundamentals of pharmacology would think of this possibility, thereby avoiding such a mistake.

An understanding of side actions and contraindications derived from a knowledge of pharmacology may be used in various ways in the pharmacy. First of all, the well-informed pharmacist realizes that laboratory tests, case histories and thorough physical examinations are needed in order to make accurate diagnoses and therefore he sends inquiring patrons to competent physicians, rather than try to counter-diagnose and prescribe. It is usually the uninformed pharmacist who fails to realize his own limitations in this respect. Even an expert diagnostician would refuse to pass judgment after only a hasty superficial examination of a patient. Great harm can be done by a wrong diagnosis and the resulting delay of proper treatment.

Harmful Potentialities

Many drugs are bought over the counter which have harmful potentialities. The pharmacist offers a real public health service by giving a warning or by inquiring into the intended use of certain potent medicaments. For example, the pharmacist should keep in mind that a cathartic may be fatal in acute appendicitis or in obstruction of the intestinal tract; that rat poisons and insecticides may kill pets and humans if used carelessly; that some of the cathartic pills of the National Formulary contain enough strychnine to kill babies if taken accidentally and that 3 or 4 Aitken's Pills N. F. also contain enough strychnine to kill a two-year-old child; that continued

use of bromides may lead to skin rashes, edema and nervous symptoms often mistaken for insanity; that overuse of colloidal silver preparations may cause permanent darkening of the skin; that in susceptible persons aminopyrine may do great damage to the white blood corpuscle manufacturing system and that neocinchophen may damage the liver; that overuse of cathartics may cause chronic constipation; that barbiturates may lead to poisoning if kept at the bedside where the sleeper may unknowingly take a handful of tablets while in a semiconscious stupor; that Demerol, which is just now reaching the pharmacist's shelves, may cause addiction in susceptible persons. These are only a few of the many things that the pharmacist should know to help protect his patrons and to build a reputation among physicians for professional competence.

Know Official Drugs

The pharmacist can be a source of information for the inquiring physician as well as the layman concerning new drugs. Examples of important new admissions to U. S. P. XII which may not be known by the physician are dihydromorphinone hydrochloride, previously known commercially only as Dilaudid; diphenylhydantoin sodium commonly known as Dilantin; neostigmine methylsulfate and the hydrobromide in place of the trade-marked Prostigmine; quinacrine hydrochloride for Atabrine; pamaquine naphthoate for Plasmoquin, mersalyl and theophyllin injection for Salyrgan; oxophenarsine hydrochloride and dichlorophenarsine hydrochloride instead of Mapharsen. When the pharmacist talks with the physician, he should not only know the names but also the general actions and uses of these new additions to the U. S. P. Most physicians would like to depend upon the pharmacist to keep them abreast of the times in the field of new drugs, and the pharmacist who has a thorough knowledge of pharmacology is in a good position to offer this service. The physician usually learns the names of new drugs from detail men or from *New and Nonofficial Remedies*, but he loses track of them when they are added to the U. S. P. or N. F. because the names are usually changed when they are made official. As a result, drugs continue to be known and prescribed only in proprietary form after they become official, which means that the physician looks more to the pharmaceutical manufacturer for professional services than to the pharmacist who is in public practice. This sort of thing is a body blow to the professional retail pharmacist.

A multitude of new drugs is being introduced to the medical profession these days and to the public as well. The busy physician does not have time to keep up with this parade, so it is up to the pharmacist to become familiar with new products and pass on his knowledge to interested physicians. The information should be authoritative or else it is not worth passing on to the physician. A background of pharmacology offers a proper perspective for judging the merits of these new products.

The National Formulary contains many drugs and preparations of little value and some of no value therapeutically. They continue to be prescribed year after year and therefore are retained in the N. F. The pharmacist could, on proper occasion, tactfully point out to the physician that improved medicaments are now available in his pharmacy with which to replace many of the time-honored prescriptions. If the pharmacist backs up his statements with facts, the physician will come to rely on this additional professional service and will cooperate more fully with him to the benefit of both.

Two of the N. F. preparations that are irrational and a total waste of money are ovary and corpus luteum. They contain infinitely small amounts of hormonal agents. Instead, estrogenic hormones and progesterone preparations should be prescribed. Questionable preparations are whole pituitary which has no advantage over posterior pituitary, and anterior pituitary which only has minute amounts of active materials. Neither drug has any value when taken orally. The anterior lobe has no functional relationship with the posterior lobe even though the two lie side by side, so whole pituitary is not a logical combination of glands if combined glandular therapy is intended.

Irrational Preparations

Another preparation that has no place in medicine is the infusion of digitalis, since the active ingredients decompose in water and in low alcoholic solutions. The physician should prescribe the tincture or pills or some other stable preparation because exact dosage is important in treating heart disorders. At best, digitalis preparations are variable in potency because of biological

assay, so it seems unreasonable to add another variable factor when it can easily be avoided.

Tincture of Iodides, commonly known as decolorized tincture of iodine, has no bactericidal properties due to iodine since the free iodine has all been converted to the salt form.

Several of the triple bromides and five bromides preparations continue to be prescribed—more from habit than anything else. Experiments have shown that sodium bromide gives less local irritation than the others and also that all of the bromides act the same when absorbed since the bromine ion is the active part of the molecule.

The pharmacist who takes the time to look into the pharmacology of the N. F. preparations will conclude, as I have, that there are useless and unnecessary preparations in this official book. Even though it contains many useful formulas, in some respects the N. F. is a reflection of the retrogressive element in the medical profession, just as the U. S. P. (although conservative) reflects the collective intelligence of the medical profession. The reason for having the National Formulary official is to provide standards for widely used drugs and formulas not included in the U. S. P. As long as they are widely used they deserve a place in the N. F. One may well wonder, however, whether a vicious cycle may not exist, *i. e.*, wide use of a preparation because it is official in the N. F., rather than in the N. F. because of wide use. In either case, if the proper cooperation can be established between pharmacist and physician the advantages of newer medications will be brought to the attention of the medical practitioner more promptly, and in due time many of these useless and questionable preparations will then be dropped from the National Formulary.

With newspapers and magazines carrying feature articles about drugs and their uses, the public has a greater incentive for self-medication than ever before. The pharmacist with a good knowledge of pharmacology is in a position to give a word of warning to some of the uninformed who become overenthusiastic in this respect. Considerable self-medication recently has resulted from publicity given to vitamin D preparations used for treating arthritis. Vitamin D is the one vitamin that may be toxic if improperly used in large doses, so it should not be administered without medical supervision in conditions requiring massive dosage. Pharmacists are familiar with the phenol poisoning that has occurred as a result of a magazine article describing the treatment of athlete's foot with camphor-phenol preparations. Sometimes articles get into print for public consumption that are false and potentially dangerous; sometimes they are only dangerous if improperly used. People are also being told all kinds of half truths through radio advertising every day. The pharmacist is in a good position to protect the public on these matters pertaining to health, and at the same time he will increase the public's confidence in him. It is not necessary for the pharmacist to go out of his way to educate misinformed patrons, but if asked he should give accurate information on subjects pertaining to health. For example, he might explain that tooth pastes and powders, according to the American Dental Association, have no therapeutic value other than aiding the toothbrush in mechanically cleaning the teeth. Other claims will not stand up under scientific scrutiny. The layman often looks to the pharmacist for accurate information and is disappointed if he is dismissed with a halfhearted answer.

In summary, pharmacology is useful to the retail pharmacist in providing the necessary knowledge of the pharmacodynamic properties of drugs, their side actions and contraindications. With this information the pharmacist can prepare and dispense medications on a sound and safe basis and make more effective his relationship with the physician and public.

92ND ANNUAL MEETING
OF
THE AMERICAN PHARMACEUTICAL ASSOCIATION
AND AFFILIATED ORGANIZATIONS
CLEVELAND, OHIO—SEPTEMBER 7, 8 AND 9

PRESCRIPTION SERVICE

PROFESSIONAL PROBLEMS OF PHARMACISTS ANSWERED. BOARD OF 11 PHARMACEUTICAL SPECIALISTS AND A. PH. A. LIBRARY AND LABORATORY FACILITIES AVAILABLE TO OUR READERS. SEND QUERIES DIRECTLY TO PRACTICAL PHARMACY EDITION GIVING ALL PERTINENT INFORMATION

EFFERVESCENCE AVOIDED

Considerable effervescence occurs upon standing in the following prescription. How can it be avoided?

Elix. luminal	℥ i
Aloin	gr. ii
Fldext. cas. sag.	℥ iv
Peacock's bromides	℥ i
Sod. nitrite	gr. v
Tr. digitalis	℥ iii
Tr. bellad.	℥ v
Elix. lact. pep., q. s. ad	℥iv

—*W. C., Maryland*

This prescription would seem to be unduly complex in the light of present-day therapeutics. However, the incompatibility that produces effervescence is the reaction between sodium nitrite and elixir lactated pepsin. The elixir provides an acid medium which results in the breakdown of the salt with evolution of nitrous acid gas. The difficulty could be avoided by obtaining the physician's permission to use aromatic elixir as the vehicle instead of elixir lactated pepsin.

GLASSWARE CLEANING FLUID

Could you suggest a really efficient cleaner for cleaning glassware in the prescription room?—A. S., South Carolina.

A formula for the widely used sulfuric acid-dichromate cleaning solution is given in the *Pharmaceutical Recipe Book* as follows:

Sulfuric acid (sp. gr. 1.84)	200 cc.
Cold water	150 cc.
Potassium or sodium dichromate, technical, powdered, a sufficient quantity	

To make a saturated solution.

With stirring, cautiously pour the concentrated sulfuric acid into the cold water. Saturate the resulting hot solution, without further heating, with the powdered dichromate salt. This solution may be used cold or hot, but used with caution.

NEUTRALIZER FOR ONION ODOR

We have a request for a hand lotion that will neutralize the odor left on the hands of housewives who handle onions in the kitchen. Can you suggest how to solve this problem?—H. B., Ohio.

The best-known ingredient to neutralize the odor of onions and other obnoxious odors is formaldehyde. One or two parts of a 40% solution of formaldehyde may be added to a hand lotion for this purpose. Sodium sulfite is another chemical that is fairly successful in removing the odor of onions. This may be used in a concentration of 1% or 2% in a hand lotion. It is best to apply such lotions after onions have been handled rather than before.

COLOGNE WATER FORMULA

Please send me a formula for Mentholated Eau De Cologne.—W. B., Louisiana.

Pharmaceutical Recipe Book III gives the following formula for mentholated cologne.

Menthol	40 Gm.
Perfumed spirit, *q. s. ad*	1000 cc.

Dissolve the menthol in the spirit. The spirit used is Spiritus Odoratus N. F.

PENICILLIN OINTMENTS

A physician has inquired about a penicillin ointment. How is such a product prepared, preferably in a water-soluble base? Is it advisable to use the powder, or should a solution be prepared first?—W. C., New York.

Most of the information on the use of penicillin in ointment form appears in the British literature. Florey and Florey (*Lancet*, 244:387, 1943) and others have pointed out that unless the whole infected area can be reached, it is useless to employ penicillin locally In treating eye infections the above authors used a penicillin ointment made by dissolving the powder in distilled water and incorporating the solution into vaseline in a strength of 600 to 800 Oxford units per gram. Frequency of application varied, but the ointment was generally used at hourly intervals and then less often as the condition improved.

Clark and others reported (*Lancet*, 244:605, 1943) on the treatment of burns and scalds with penicillin cream to eliminate hemolytic streptococci. The cream was prepared as follows:

Heat Lanette wax SX, 50 Gm., and castor oil, 120 cc., together at 60° C. to 70° C. until the wax is melted. Then, with gentle stirring to avoid aeration, add 275 cc. of sterile water at 60° C. This produces a stable base of approximately neutral reaction. Separately dissolve penicillin powder in sterile distilled water to make a solution of about 800 Oxford units per cc. Of this solution add 5 cc., as required, to 30 Gm. of the base and mix thoroughly. The final strength should be adjusted to about 120 units per gram of cream. It was found that this cream retains its

THESE MEN SERVE YOU AS THE PRESCRIPTION INFORMATION BOARD

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activity for at least a month when stored in a refrigerator at 2° C.

Bodenham reports (*Brit. Med. J.*, 2:655, 1943) the successful use of a penicillin ointment on granulating surfaces. The ointment was prepared by making a base of Lanette wax, vaseline and water, one third of each, and autoclaving at 10 pounds pressure for 20 minutes. When the base has cooled, aqueous penicillin solution, prepared beforehand in the strength of 500 units per cc., is mixed with it. The consistency of this oil in water emulsion can be varied by adding more water. The strength of ointment commonly used was 100 units per gram.

Lanette wax SX, a British product used in the above formulas, is apparently not available on the American market. It is reported that a close approximation of this emulsifier can be made by combining 9 parts of cetyl alcohol flakes with 1 part of Duponol C (du Pont).

Another excellent washable base similar to the type described above is the Beeler formula No. 8 (see THIS JOURNAL, 5:12, 1944), although as far as is known this base has not been given clinical trial in combination with penicillin.

ARSENIC IN SOLUBLE FORM

How should the following prescription be dispensed?

Arsenic trioxide.....	0.06
Strychnine nitrate.....	0.06
Elixir Cofron, q. s. ad.....	240.

What would you use to dissolve the arsenic trioxide and is there anything in the elixir that would precipitate it?—H. K., Missouri.

The simplest method of dispensing this prescription would be to use arsenic trioxide in the form of Solution of Arsenous Acid U. S. P., with the prescriber's permission. Six cubic centimeters of this solution provides in soluble form the 0.06 Gm. of arsenic trioxide specified. There should be no further incompatibility.

SOURCE OF BISMUTH SALT

Which pharmaceutical laboratory makes a bismuth salt of heptadiene carboxylic acid in tablet or capsule form?—J. D., New York.

Two distributors of this product are the G. F. Harvey Company, Saratoga Springs, N. Y. (trade name Amalbis), and Specific Pharmaceuticals, Inc., New York, N. Y. As far as we know the drug is being supplied only in the form of cocoa butter suppositories. It is rapidly absorbed rectally and is available in two dosage forms, one for children and one for adults. A recent report (*Arch. Otolaryngol.*, 39 : 259, 1944) states that in a series of 40 patients with acute tonsilitis, the treatment produced a "remarkable . . . amelioration of symptoms and signs." It is also claimed to be efficacious in cases such as secondary infections of tonsillar tabs and granulation tissues occurring after tonsillectomy.

CARIES CONTROL METHOD

How is sodium fluoride being used to prevent tooth decay?—H. R., New Jersey.

Discussion in the dental literature of sodium fluoride as a means of caries control stems from observation that persons living in areas where the water supply contains small amounts of this chemical have a lower incidence of caries than those living in other sections of the country. The concentration is often three to five parts fluorine per million parts water. Controlled studies are now under way to obtain a better evaluation of this observation.

The chemical apparently is an enzyme-disturbing agent which upsets the metabolic processes of bacteria in the mouth. Investigations indicate that teeth with liberal amounts of fluorine deposited in them during the formative period seem to retain a resistance to caries throughout life. No information seems to be available on the persistence of caries resistance in persons artificially treated with sodium fluoride solution Although clinical evaluation is difficult, a recent report (*J. Am. Dent. Assoc.*, 31:353, 1944) shows some promise. Routine use of sodium fluoride mouth wash resulted in an average reduction of 87% in the count of aciduric and yeast cells in the mouth after four weeks' use. Twenty persons were selected at random for the test. The formula for the mouth wash used is:

Sodium fluoride.....	1 Gm.
Water.....	4 L.

Color, sweeten with saccharin, and flavor to taste. The sweetening should be excessive as this makes a concentrated solution to be diluted before use.

Sig.—One teaspoonful in a half glass of water as a mouth wash.

This proposed method for caries control is still in the experimental stage and should be used only under the direction of a dentist. The high toxicity of sodium fluoride should be borne in mind.

Another new use for sodium fluoride in dentistry (see THIS JOURNAL, 4:350, 1943) is to desensitize naturally-occurring exposed dentin and to relieve the pain of cavity preparation in exposed areas.

TOO TOXIC FOR SAFETY

Where can I obtain toxicodendrol for use as an insecticide and rat poison?—W. J., Illinois.

Toxicodendrol is not commercially available as a poison for rodents or insects. Although this chemical would be effective, research at the National Institute of Health indicates that it is extremely toxic to most persons and will give allergic reactions in rhus-sensitive individuals in concentrations so low that they cannot be detected by chemical means. The dangers involved in using toxicodendrol for the purposes mentioned would seem to be too great.

PRESCRIPTION DECOLORIZES

What causes the following prescription to decolorize?

Liquor ammoniae anisatus	℥i
Codeine sulfate	gr. ii
Glycerin	
Elixir lactated pepsin	*aa* ℥i
Aqua, q. s. ad	℥iv

—*H. B., New York.*

The Liquor, which is officially titled Anisated Spirit of Ammonia, is alkaline. The alkalinity of the Spirit would be neutralized somewhat by the acidity of the Elixir of Lactated Pepsin, but since the prescription decolorizes there is apparently an excess of ammonia. This would very likely precipitate the cudbear in the Elixir if as appears to be the case, this wartime replacement for amaranth were used as the coloring agent. If amaranth can be obtained as the coloring agent this difficulty should be avoided. There is also a possibility that the alkalinity will precipitate the codeine sulfate, but a low alkalinity together with the solvent effect of the glycerin may prevent this reaction.

PREPARING FOOT POWDERS

Would the addition of a small amount of sulfa drug to a foot powder be of any medicinal value? If so, which drug should be incorporated? Also, please suggest a formula for aching sweating feet.—I. S., New York.

Addition of a sulfonamide to a foot powder would not seem to be a rational procedure. These compounds do not have mycotic value. The possibility of protecting against rare secondary infections would probably not be considered of significance by the podiatrist. Furthermore, the use of a sulfonamide externally causes sensitization, at least cutaneously, in quite a large number of cases and therefore might interfere with the administration of a sulfonamide when there is a real and urgent need for such therapy.

The following preparations, which may be used for sweating aching feet, are from the podiatry section of *Pharmaceutical Recipe Book III*.

ASTRINGENT FOOT POWDER

	Gm.
Alum, fine powder	600
Tannic acid, fine powder	50
Salicylic acid, fine powder	20
Orris, fine powder	330
To make	1000 Gm.

Mix thoroughly and pass through a No. 80 sieve.

MEDICATED FOOT DUSTING POWDER

	Gm. or cc.
Menthol	5.5
Phenol	3.8
Alcohol	15
Zinc stearate	330
Boric acid, powdered	650
To make about	1000 Gm.

Dissolve the menthol and phenol in the alcohol and mix the solution with the zinc stearate. Triturate until alcohol is all evaporated. Then add the boric acid, triturating until a uniform

powder results. Pass through a No. 60 sieve.

For use, apply freely on itching surfaces.

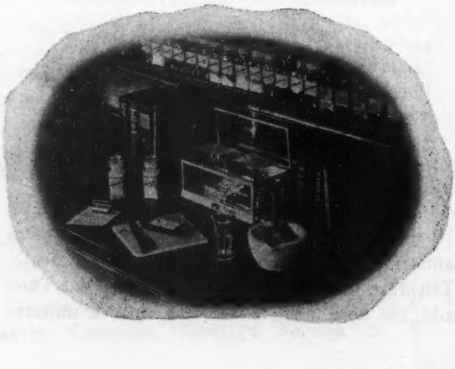
WATER SOFTENER NEEDED

Hard water has given considerable trouble in our prescription room, and I would like to know what might be the best water softener and how to use it. Where can Zeolite be obtained?—W. B., Louisiana.

Zeolite, an earthy material which softens water by base exchange, is available through the National Aluminate Corporation, 6216 West 66th Place, Chicago, or the International Filter Company, 325 West 25th Place, Chicago. Both of these suppliers usually deal in large quantities, so they may refer you to a smaller dealer.

It is difficult to give directions for the use of water softeners without knowing the nature of the "hardness" of the water to be treated. When Zeolite is used, the water is either shaken with a small quantity of the chemical or the Zeolite is packed into a column, like a percolator, and the water permitted to pass through slowly. When sodium carbonate or borax is used, a small quantity—depending on the hardness of the water—is simply placed in the water and permitted to remain in solution. Sodium hexametaphosphate, available as Calgon, is one of the most effective water softeners. A teaspoonful is usually enough to soften a large dishpanful of hard water. If Calgon is to be used commercially the manufacturer must be consulted, as a patent covers this product.

If the water is to be softened for a particular use and the same degree of softness is always desired, chemical methods should be employed to determine the degree of softness.



ALUMINUM HYDROXIDE GEL

How can an aluminum hydroxide gel be prepared and about how long will the preparation remain dispensable?—H. H., North Carolina.

One method of making such a preparation is given below:

Potassium and aluminum sulfate	320 Gm.
Sodium carbonate, monohydrated	140 Gm.
Distilled water, *q. s. ad*	3785 cc.

Dissolve the potassium and aluminum sulfate in about 3000 cc. of water; then boil, filter and reheat to boiling. Add the hot solution slowly with stirring to a hot solution of the monohydrated sodium carbonate, which previously has been heated and filtered. Add 7000 cc. of boiling distilled water to the mixture with stirring, and let the precipitate settle. For large batches it is desirable to use mechanical agitation in the above procedure.

Sulfates are removed by siphoning off the supernatant liquid and washing the precipitate repeatedly by decantation with fresh distilled water. Continue the washing until the precipitate gives a negative test for sulfate by the method given in the monograph on aluminum hydroxide gel on page 199 of U. S. P. XII

Make an aqueous suspension of the precipitate containing 3.6% to 4.4% of Al_2O_3 as directed in the U. S. P. Suspensions are maintained better if the washed gel is passed through a homogenizer. Treatment of the freshly precipitated gel with a small quantity of Solution of Sodium Hypochlorite U. S. P. (100 cc. to 5 gallons), followed by thorough washing is helpful in preventing the development of a moldy odor. No mold growth has been noted after six weeks, but a musty odor has been detected in some preparations. The addition of 5% glycerin is also helpful. Sodium benzoate not exceeding 0.5% may be added as a preservative.

Many pharmacists use proprietary preparations from which the aqueous suspension can be extemporaneously prepared by dilution. A product of this kind, called "Aluminum Hydroxide, Compressed Gel, Type F-2000," is distributed by by the Schofield-Donald Company, Inc., Newark, N. J. Directions for diluting this paste can be obtained from the manufacturer. Two other types are available from the same source, each yielding a product of different viscosity.

BRIEF comments on recent books and brochures of interest to the pharmacist are presented periodically for the convenience of our readers. If there is a publication that is unavailable locally, THIS JOURNAL will obtain it for you or supply further information as an additional service. Send check or money order to cover the retail price, or if the price is unknown send $5 (change to be refunded).

GUIDANCE LEAFLET 14: PHARMACY—*U. S. Office of Education* (*Government Printing Office*), 13 pp., $0.05; quantity rates: 100, $4.50; 500, $20; 1000, $35. This vocational guidance leaflet for prospective pharmacy students has just been revised by the AMERICAN PHARMACEUTICAL ASSOCIATION in cooperation with the Office of Education and may be ordered through the ASSOCIATION'S offices at 2215 Constitution Ave., Washington 7, D. C. It contains a brief review of the nature, opportunities and requirements of pharmacy; an analysis of licensure requirements in each state; and a discussion of colleges, including average expenses, size of student bodies, and the degrees available.

AMERICAN ILLUSTRATED MEDICAL DICTIONARY. —W. A. Newman Dorland—*W. B. Saunders Co.*, 1668 pp., $7.50. Twentieth edition of excellent dictionary covering terms in medicine, dentistry, pharmacy, chemistry, veterinary science, biology and allied fields.

NEW AND NONOFFICIAL REMEDIES, 1944—*American Medical Association*, 778 pp., $1.50. Contains description, dosage forms, commercial sources and other data on drugs accepted by Council on Pharmacy and Chemistry as of January 1.

VITAMINS AND HORMONES. Advances in Research and Applications, Vol. I.—Robert S. Harris and Kenneth V. Thimann, editors—*Academic Press*, 452 pp., $6.50. First of projected annual series in which two subjects of great importance in modern pharmacy are discussed. Clearly and critically presented by recognized investigators. Reviews are supplemented by bibliographies and comprehensive author and subject indexes, increasing the volume's usefulness to research workers.

THEORY OF EMULSIONS AND THEIR TECHNICAL TREATMENT, 4th Ed.—William Clayton—*Blakiston & Co.*, 492 pp., illus., $10. Colloidal phenomena relating to emulsions are clearly and concisely presented with minimum of mathematical terminology. Much new material has been added in this edition—an important technical book for the laboratory worker in pharmaceutical chemisty.

THE CHEMISTRY OF ORGANIC MEDICINAL PRODUCTS—Glenn L. Jenkins and Walter H. Hartung—*John Wiley & Sons*, 675 pp., $6.50. A survey book of the field as well as an excellent reference source for the structural formula, method of preparation, properties, uses and modes of administration of particular organic drugs.

BIOCHEMISTRY OF THE FATTY ACIDS—W. R. Bloor—*Reinhold Publishing Co.*, 387 pp., $6. An authoritative monograph of the American Chemical Society covering physiological aspects comprehensively, with somewhat less emphasis on chemical and physical-chemical aspects.

A TABLE OF COMMON HAZARDOUS CHEMICALS, 7th ed.—*National Fire Protection Assoc.*, 31 pp., $0.30. Contains data on 98 hazardous chemicals with respect to their fire hazard, life hazard, recommended storage and method of fire fighting.

Ancient Uses for

INSECTS IN CHINESE PHARMACY

by ARTHUR H. BRYAN, M.A., V.M.D.*

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PRIMITIVE ORIENTAL PHARMACIST HAD TO KNOW HIS ENTOMOLOGY TO PREPARE ODD INSECT DRUGS

OUR Chinese allies have for centuries utilized a peculiar weapon in the interminable war on insects by eating the arthropod pests as both food and medicine.

Today it is known that some insects taken internally do have some degree of nutritional or therapeutic value. An assay of the praying mantis or hobby horse, for example, reveals a content of 58% protein, 12% fat, 3% ash, vitamin B complex and vitamin A in extracted carotinoids. The insect exoskeleton, composed of chitin, is an interesting compound of sugar and amino acids, containing about 7.5% nitrogen; hydrolyzed, it yields acetic acid and glucosamine.

The dried centipede, composed almost entirely of muscle protein, chitin, mineral salts and a small amount of other compounds, was considered to be a potent medicine by primitive Chinese pharmacists for snake bites, facial paralysis, convulsions and demon possession. Hornet's nest contains 7.52% nitrogen, 11.3% ash and 10.3% water. The dried pill bug of the chinese pharmacy contains as much as 45.03% ash and 23.3% protein. Several species of insects are used as therapeutic agents in edema by Chinese pharmacists today, apparently because of their protein and vitamin B content.

The extraction of vitamins from insects would probably be a difficult process and scarcely worth while. Nevertheless, ground whole insects, with their high vitamin, protein and essential oil content, might contain something of value, now unknown, for use in human or veterinary medicine. Would not this little-investigated subject make a fascinating pharmaceutical research project?

The Chinese, for centuries, have been pestered with insect enemies just as we have; but being philosophically minded they have utilized insects as both food and medicine. Ancient Chinese pharmacists had a vast amount of experience and knowledge of the various metamorphoses of the silkworm and gave clear ideas about the life cycle of the dung beetle and some other common insects.

Moffet, in 1634, compiled the *Theatrum Insectorum*, citing Pliny, Galen, Dioscorides and other early authorities on the uses of more than 50 insects identical with those in the Chinese Herbai or pharmocopœia. The Chinese recognized the astringent and hemostatic qualities of insect galls, which were used for many centuries previously in Greece as a treatment for piles, bleeding wounds and as a general astringent.

The Greek-Roman school probably originated the first pharmaceutical uses of the scorpion, seaworm, bedbug, locust, maggot, buprestid, newt, ascaris, housefly, louse, dog louse, butterfly, earwig and water spider as therapeutic agents. Scorpions were used for skin diseases, malignant boils and suppurating ears. In old European pharmacy, the bedbug was prescribed by Dios-

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corides, Galen and others as a cure for malarial fever. The dog louse and the pill bug were used as a diuretic and to treat malaria.

The scarab or dung beetle was used as an amulet in ancient Egypt and Greece. For quartan malaria, a "cure" was provided by a live insect which was put in a red bag and hung around the neck. This is cast in a Chinese mold in the "Sheng Hui Fang" which prescribes one atlas beetle (classed by the Chinese with the scarab), two ounces of lard, one garlic bulb, a handful of onions and the tips of fifth-moon dumplings. At dawn on the fifth moon in a quiet spot, the pharmacist, bareheaded and barefooted, raises his tongue to the roof of his mouth, faces north, and compounds one pound of this mixture into 1000 pills. Each pill is wrapped in new cotton cloth and tied on the upper arm—men on the left, women on the right—to cure malaria.

Horse Flies "Cure" Black Eyes

Powdered dried horseflies snuffed into the nose is said to remedy recurved eyelashes. Horseflies suck the blood of horses, so in Chinese lore they are suggested for the relief of congestion and to remove extravasated blood, as in bruises and black eyes. On the same principle, woodpeckers which pick grubs out of tree trunks, supposedly pick worms out of aching teeth if the dead bird is administered in pill form. Worms in the teeth as a cause of toothache goes back to earliest Assyrian records.

The longhorn beetle is known as "heavenly cow" because the horns are like a water buffalo's. This beetle is used to treat severe convulsions in infants and as a facial cosmetic in the Chinese beauty parlor. A Taoist devised empirical uses for "Ping Yi," or fairy pills, containing spiders and leeches ground up, which are supposed to enable one to live under water. Spiders fed on lard, killed and smeared on the feet will, it is said, enable one to walk on the surface of water (frozen, perhaps?). It was believed that diving beetles cured circulatory diseases, obstruction of the bowels and stopped night crying of children due to stomach ache.

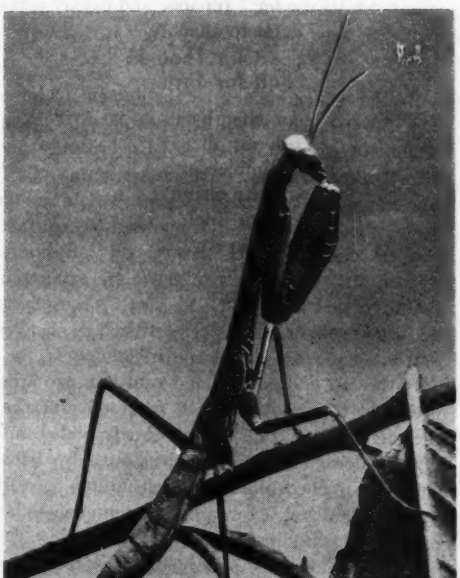
The composition of Chinese honey is much the same as that produced in other parts of the world, a very concentrated form of invert sugar and a little dextrin. Its nutritive, demulcent and laxative properties are well recognized. Orientals used honey to clarify vision and for pannus of the cornea.

The stinkbug (Aspongopus), called the "nine smell insect," has an unusual reputation as an aphrodisiac, and also may be prescribed for "weakness" of the kidneys and spleen and for asthma. The noted "Black Dragon Pills" contain stinkbugs as the chief ingredient.

Five hundred lice, comminuted, are supposed to relieve a splitting headache when taken internally, or may be applied locally to eat off warts. According to Dr. E. E. Read of Shanghai, this ancient but "lousy" treatment is more likely to give the patient an attack of typhus.

Seven insects boiled with two eggs was the old standard treatment for hydrophobia, in which the resulting drastic hematuria was considered beneficial.

A Sund official dreamt that his relative, Chang Chia, was sick with dry cholera and that spiders were the only remedy. He immediately sent a messenger to inquire about his relative's health.



THE PRAYING MANTIS—he was assayed.

Finding that Chang had died before the dream took place, he regarded this remedy as a supernatural revelation for the benefit of others. Spider webs applied to bleeding wounds as a styptic, survives in British slums today.

The web of the garden spider collected on the fifth day of the fifth moon, tied to the body in a bag without the wearer knowing it, was said to ward off malaria. Dioscorides, by a similar procedure, claimed to have cured malarial fever.

Ancient Chinese obstetrical and optical drug specialists used the cicada (17-year locust) for difficult childbirth, expulsion of the placenta, and to remove films over the eye. The presumed physiological action was based on the fact that the insect casts its skin. The toad may not cure warts but, according to Dr. Hou Chen's researches, the use of toad venom by the old Chinese for hemorrhage of the gums and for sinusitis may be justified because of the presence of adrenaline, cinobufotozin, arginine, suberic acid and ergosterol. Its anesthetic action accounts for its use for toothache and canker sores.

Food for Thought

Bee larvae were eaten by the ancient Chinese. The Yunnan Chih say their people eat locusts, dragonflies, and bumblebees. Cockroaches and locusts were a favorite dish in Szechuan. T. T. Liw has published an interesting article on the use of insects as food in Kwangtung, where grasshoppers, golden June beetles, crickets, stinkbugs, wasp larvae and silkworm larvae are eaten. In the novel and movie, "Good Earth," the plague of locusts might have been utilized as heaven sent manna for the starving orientals.

In the *Li Chi* one reads that centuries ago ants, bees and cicadas were used for food and that the sacrificial food dishes contained pickled ants eggs, which were eaten in the South by tribal chieftains. The white ant, which entomologically is not an ant but a termite, is eaten even today by the hill tribes in Burma.

Modern pharmacy still utilizes insect derivatives as medicinal agents. Chinese wax, a secretion deposited on trees in Western China by the insect, *Coccus ceriferus*, contains ceryl cerate, which has several commercial and medicinal uses. Honey still has some pharmaceutical uses. The gall fly (Cynipoidea), gall midge (Itonididae), and certain aphids attack plant tissues causing galls which have medicinal properties. Beeswax, cera alba or flava, is used as a base in modern ointment preparations.

Cantharides, obtained from Spanish flies (*Cantharis vesicatoria*), is a powerful vesicant and rubefacient and has external uses in human and veterinary practice, but is dangerous when taken internally. Cochineal from the red scale insect, *Coccus cacti*, is used as coloring agent in medicinal preparations. Formic acid, now synthesized but originally obtained from the ant *Formica rufa*, is used, particularly in foreign countries, as a caustic, astringent and counter-irritant. One of the most important insect products, although not used medicinally, is lacca, or shellac, a resinous secretion that encrusts the bodies of Tachardia species.

Claim Your Refund On Alcohol Tax

Six dollars of the $9 tax you have paid on each proof gallon of alcohol and other distilled spirits used in prescription compounding and manufacturing pharmacy during the quarter April 1 to June 30 will be refunded by the government upon payment of the special tax and submission of supporting data for the drawback claim (see page 200).

To keep orderly simplified records complying with Bureau of Internal Revenue requirements, send fifty cents for a year's supply of tax drawback forms to the editor of This Journal 2215 Constitution Avenue, Washington 7, D. C.

Druggists' Digest

OF NEW FORMULAS, RECENT PHARMACEUTICAL DEVELOPMENTS, AND OTHER PROFESSIONAL DATA

GAMMA GLOBULIN EFFECTIVE FOR PREVENTION OF MEASLES

Gamma globulin, a protein fraction of blood serum containing antibodies, appears to be an effective agent for the prevention of measles epidemics. Success of the method is indicated by data on more than 1000 individuals obtained through research studies conducted by the Commission on Measles and Mumps, which functions under the Army's Office of the Surgeon General.

Most of the tests were conducted in Army camps, but a clinical trial during an outbreak of measles in a girls' college is cited in a War Department summary of the work to indicate the method's effectiveness.

Gamma globulin was administered to 67 exposed, susceptible students. Globulin was not given to 38 other susceptible students who served as controls. Among the 67 students treated there was 1 case of average measles, 3 cases of modified measles and 8 cases of mild measles. Among the 38 students not given gamma globulin there were 18 cases of average measles and 5 cases of mild measles.

Successful clinical tests have also been conducted by the Navy and other developmental research was supported by OSRD's Committee on Medical Research and NRC's Division of Medical Sciences.

As a result of this work, gamma globulin is now being separated from a portion of the blood collected by the Red Cross. Since the blood collected comes from persons who have established immunity against many contagious diseases, the gamma globulin contained in the plasma provides an excellent source for the antibodies of measles and of other diseases.

Large supplies of gamma globulin are already on hand for administration to men in the armed forces. Surpluses of the immune serum globulin not needed by the armed forces will be assigned to the Red Cross for civilian disposition. Five cooperating pharmaceutical laboratories will process the material and make it available through health departments at cost, since the blood has been donated by the public. After the war it is expected that production of gamma globulin will be put on a commercial basis and will be available through pharmacies. At present its use is limited to measles prevention but its possibilities as a preventive for other diseases are now being investigated.

EXTENSIVE USE OF PENICILLIN TO TREAT SYPHILIS PLANNED

Large-scale use of penicillin in the treatment of early syphilis is being undertaken by the U. S. Public Health Service and a number of state health departments. Selected patients will receive penicillin in rapid treatment centers, of which there are now more than 50 in the United States. A four-day and an eight-day schedule of treatment are being considered for the program.

About a third of all syphilitic patients admitted to rapid treatment centers also have gonorrhea. Penicillin has already proved its value in the treatment of gonorrhea. If further use of penicillin against syphilis confirms the results of clinical trials to date, it will be possible for the first time in history to treat patients having both veneral diseases with a single drug.

More than 1000 patients with syphilis in all stages have been treated in clinical trials by the U. S. Public Health Service, the Army and the Navy in collaboration with the Penicillin Panel of the National Research Council. Although the drug had an immediate effect on syphilis of all types, more time must elapse before permanence of results can be judged, Dr. J. R. Heller, Jr., chief of the Public Health Service's Veneral Disease Division, states. The present program being undertaken in the rapid treatment centers will help to obtain a full evaluation of the therapy.

PHARMACISTS AID NEW DRIVE FOR RECRUITING U. S. NURSES

"Pharmacies can be of inestimable service to the U. S. Cadet Nurse Corps recruiting program because of their outstanding position as the community health center," Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, stated in launching the drive started July 17 to enlist qualified young women in the Cadet Nurse Corps.

To serve as a local information agency, each pharmacist is being asked to distribute leaflets to interested persons and display a counter card and window poster. Because the project is so closely allied with the public health function of pharmacy, the National Pharmacy Committee on Public Information is promoting the program, both to pharmacists and through the various publications to the laity.

LIMITATION ON RECIPROCAL LICENSE BECOMES EFFECTIVE

To be eligible for reciprocal registration, pharmacists who become licensed after July 1 must be graduates of a college accredited by the American Council on Pharmaceutical Education. Sixty-four of the 67 colleges recognized by state boards are now accredited. If any of the pharmacy colleges now accredited lose their accreditation, but do not suspend operations, their future graduates will also be deprived of reciprocity privileges, the National Association of Boards of Pharmacy announces.

Although this NABP requirement was adopted four years ago, its effective date was deferred until now so that students then enrolled in non-accredited colleges would have an opportunity to become licensed with the right of reciprocal registration.

A. M. A. President Sees NEED FOR IMPROVED PRESCRIPTION WRITING

URGING that more emphasis be placed on prescription writing and drug therapy in medical curricula, Dr. Herman L. Kretschmer, new president of the American Medical Association, points out (*J. Am. Med. Assoc.*, 125:326, 1944) that the subject of treatment is too often glossed over while great emphasis is placed on pathology and diagnosis.

To obtain some indication of present trends in prescription writing, Dr. Kretschmer studied 5000 consecutive prescriptions received by four Chicago pharmacies. Results of the survey are summarized in the following table from the *Journal of the American Medical Association:*

	Pharmacy Location			
Prescriptions	Loop Area	Residential I	Residential II	Hospital
Nonproprietary (official and N. N. R.)	62.2%	61.7%	59%	69.4%
Proprietary remedies	26.9	27.4	38.1	14.8
Vitamins	10.9	10.9	2.9	15.8

It was considered significant that the hospital, a progressive medical center, had the lowest percentage of use of proprietaries. Several pharmacists practicing where a relatively high percentage of proprietary prescriptions were filled stated that they could tell what detail man was currently operating in the neighborhood by the type of prescriptions received during a given period. Dr. Kretschmer calls it "a sad state of affairs" when the treatment prescribed by physicians is so dependent on salesmen from the drug houses.

Pharmacists were of the opinion that this situation stems from the fact that physicians have not been taught the art of prescription writing. The A. M. A. president believes that the fault is more basic in that "students frequently are not taught to choose a specific drug for a specific disease and symptom and are not encouraged to apply the principles they have been taught."

To test this assumption a survey was made of pharmacology departments in medical schools.

In the 49 schools replying, the number of hours devoted to prescription writing varied from 1 to 180 hours. The number of hours devoted to pharmacology ranged from 7 to 277.

In view of the replies to the questionnaire and other evidence, Dr. Kretschmer believes that many pharmacologists have lost sight of the fundamental objective: to lay the foundation for therapeutics and the prescribing of proper treatment. Prescription writing, he states, should occupy a much larger place in the curriculum. The young physician should be able to write rational prescriptions, legibly and in English. (See THIS JOURNAL, May, 1944, 158).

Not all the blame for present shortcomings can be laid at the door of the pharmacologist, however. Instruction and development of the student's knowledge of therapeutics should be continued in the clinic. At present, it is maintained, too many hospitals—for various reasons—use stock preparations, "such as Dr. Carl's Cough Medicine or Dr. Anderson's Arthritis Medicine." Elsewhere drugs from a limited formulary are prescribed by letter or number. As a result, "the interns and residents in these hospitals prescribe by means of these predesignated numbers and names, many times not knowing at all the contents of the prescription."

Many medical educators are aware that there is room for improvement in some of these respects and are taking remedial steps. As one approach to the problem, Dr. Kretschmer cites the plan now in effect at the Medical College of Virginia (see THIS JOURNAL, April, 1944, 93) where the affiliated school of pharmacy was asked to aid in the teaching of prescription writing to medical students.

GMPR AMENDED TO COMPLY WITH STATE FAIR TRADE LAWS

An amendment to the General Maximum Price Regulation now permits the pharmacist to sell products at the minimum price required in March, 1942, under a state Fair Trade Act in cases where he can show, upon application to OPA, (1) that a lower price is set by the GMPR or that he has been permanently enjoined by a court from selling the product at less than the state Fair Trade price and (2) that the product was generally sold at retail during March, 1942, in the locality of the pharmacy at prices no lower than the minimum state Fair Trade price.

ESSAY CONTEST FOR STUDENTS

Pharmacy students will have an opportunity to express their opinions on "How to Improve the Professional Status of Pharmacy" through a national essay contest being sponsored by the National Pharmacy Week Committe. The winner will receive a $25 war bond and, if suitable for general publication, his essay will appear in the Pharmacy Week issue of THIS JOURNAL.

The best essay from each college, selected through local contests, must be submitted to the chairman of the Pharmacy Week Committee by August 15. Entries must be typed double-spaced and should not exceed 2000 words in length.

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1. National Formulary, Seventh Edition, 1942, Page 316.
2. Symposium on Pectin & Pectin Pastes, Bulletin of the National Formulary Committee, Vol. 9, No. 1, Oct. 1940.

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BRITISH STUDENTS DISCUSS POSTWAR PLANS

HOPE for an increased number of exchange scholarships in the postwar period to improve contacts between American and British pharmacy was expressed in a communication to THIS JOURNAL from J. E. Shinner, president of the British Pharmaceutical Students Association.

Correspondence has also been inaugurated between the British students and the A. PH. A. branch at Ohio State University through a contact initiated by Alvin Cardner, a former Ohio State student now with the armed forces in England. The British counterpart of the A. PH. A. student branches has been organized for only a year and recently held its second annual conference at Nottingham.

In reporting on the meeting, Mr. Shinner stated that discussion centered on the rapid evolution of pharmaceutical education in recent years and how this force could be used to stimulate the healthy growth of the profession. G. E. Trease, head of the pharmacy department at University College Nottingham, pointed out that there has been an unsatisfactory and unstable equilibrium between pharmacy and medicine in England. The pharmacist's training and work should be quite distinct from that of the medical practitioner, the students were told, and there should be less talk of one being the "hand maiden" of the other. A suggestion that penicillin should be dispensed by bacteriologists instead of pharmacists was cited as an example of the complete lack of knowledge in some quarters regarding present pharmaceutical training.

Apprenticeships Criticized

Attacking the apprenticeship system, Mr. Trease maintained that the standard of dispensing skill among students is declining and is now regrettably low. Pharmacists willing to undertake the training of apprentices and having the necessary facilities to do so, he said, no longer exist in adequate numbers. British pharmaceutical education has developed along lines similar to educational trends in the United States, but the American curriculum was praised as being more elastic in providing specialization in hospital, retail and manufacturing pharmacy.

Commenting on a point that applies to both America and Britain, Mr. Trease thought it "rather remarkable" that a teacher in an elementary school has been taught how to teach, while the university instructor has not.

At a later session, the British White Paper on government health insurance was discussed. J. C. Young, member of the Council on the Future of Pharmacy, suggested that public reaction to the proposal could be divided into three classes: those who were in favor of it, those who were opposed to it, and those who had read it. It was stated that the attention given to pharmacy in the government health insurance plan was disappointing and that British pharmacists should take the lead of physicians and rally for a common policy.

Mr. Young advocated that the dispensing in any health service adopted should be done in existing pharmacies, since health centers could

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not utilize more than half the present number of British pharmacists, and the other half would have to become salesmen of cosmetics and proprietary medicines.

Many divergent views were expressed concerning the British plan for government health insurance and the discussion closed with the Students Association adopting a resolution to the effect that the supplying of all pharmaceutical preparations required in any health service should be restricted to pharmacists.

WITH A. PH. A. BRANCHES

DELEGATES from student branches in District 4, comprising Illinois, Wisconsin, Michigan, Ohio, Indiana and Kentucky, met at the University of Wisconsin in May. A constitution was adopted and formal plans completed for cooperation on a regional basis.

Now that the student organization of the A. PH. A. has grown to 32 branches representing every section of the country, it is hoped that cooperation of branches by districts can be effected elsewhere to further the objectives of the parent organization. The program at the district meeting included a number of lectures, and the student representatives exchanged views on the policies and activities of the branches.

Officers elected for the District 4 branch organization were Melvin Chambers, Ohio State University, president; Donald Meyer, University of Illinois, vice-president; and Jack Moore, Purdue University, secretary-treasurer. Provision was made for a representative of the district branches to be sent to the annual meeting of the A. PH. A. each year.

At the joint meeting of the University of Buffalo student branch and the Western New York local branch in May, Dr. Joseph Aquilina of Meyer Memorial Hospital discussed "A Case Report of Treatment of Subacute Endocarditis with Penicillin." Gerald Arywitz, graduate student in pharmacy at Buffalo, spoke on "A Rapid Method for Calculating Isotonic Solutions." The program concluded with an address on "Acute Needs of Pharmacy with Emphasis on Uniform Prescription Pricing Schedules" by Prof. Arthur P. Wyss of the University of Buffalo School of Pharmacy.

A technicolor motion picture entitled "Regional Anesthesia" was shown by Bert Caldara, Winthrop representative, at the June meeting of the Buffalo branches. Physicians and surgeons were invited to attend. The latter part of the program was devoted to a round-table discussion of recent regulations and events affecting the practicing pharmacist. New officers announced for the Buffalo student branch are Gerald Elliott, president; Jesse Goldbaum, vice-president; Doris Simon, secretary; and Gertrude Mroczynski, treasurer.

Fifty members of the North Pacific branch heard Dr. William Todd of the University of Oregon Medical School discuss the processing of vitamin A from shark livers and the so-called bottom fish. The branch reports that many new members have been obtained under the leadership of the new president, Walter Rhodes. The branch recently held a dinner meeting at which a motion picture was shown entitled "The Story of Lyovac Normal Human Plasma."

Prescription pricing was discussed by Dr. Gustav Bachman of the University of Minnesota College of Pharmacy at the meeting of the Northwestern branch. Officers elected were H. H. Gregg, chairman; and Dr. Ole Gisvold, secretary-treasurer.

New officers reported by the Loyola University student branch are Max Burgdorf, president; Anna St. Pierre, vice-president; John Scariano, treasurer; Lelia A. Clesi, recording secretary; and Margaret Norris, corresponding secretary.

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